

4. Supply and Demand Developments

Economic activity in the second quarter proved stronger than the previous Report's projections. Key drivers of the quarterly growth were private consumption and construction investments. Machinery and equipment investments remained muted while imports gained momentum owing to the appreciated Turkish lira and brisker domestic demand. Additionally, net exports posted a slowdown compared to the first quarter owing also to the deceleration in exports while continuing to provide strong support to annual growth.

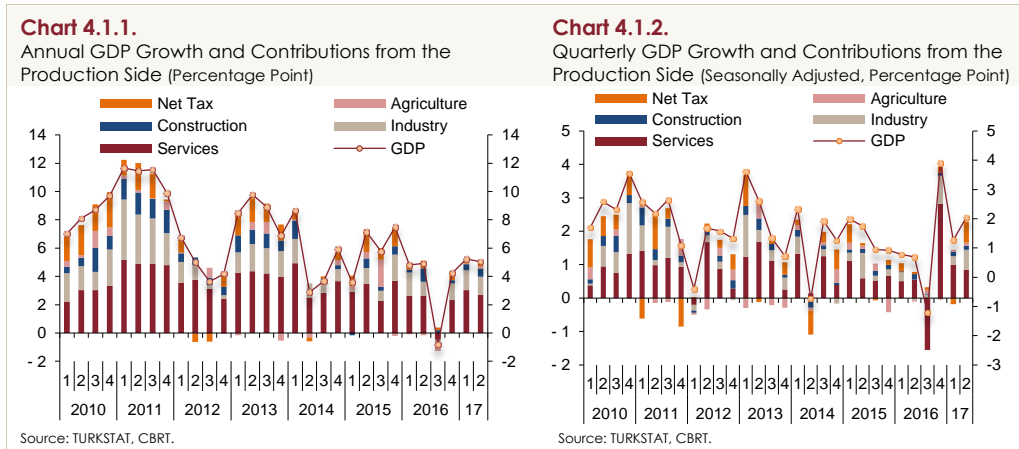
Leading indicators suggest that economic activity remained robust in the third quarter. Industrial production data for the July-August period and the third quarter's survey indicators have signaled vigorous industrial growth, albeit at a slower pace since the second quarter. Similarly, indicators for services and trade sectors also exhibit a favorable outlook amid the wider spread of growth across sectors. The rebound in the tourism sector buoyed up economic activity in this period. On the expenditures front, private consumption provided further support to growth, while machinery-equipment investments, which have been sluggish for a long time, emit stronger signals of recovery. Domestic demand is expected to fuel quarterly growth further in the third quarter. However, the deceleration in exports of goods and the acceleration in imports of gold are likely to drive the contribution from net exports down.

In the second half of the year, as the improved economic activity exhibited a wider sectoral spillover, domestic demand is projected to continue to stimulate growth, while net external demand is expected to offer a more limited contribution. The effect of CGF-backed loans and macroprudential incentives on growth is envisaged to peak in the third quarter and decline gradually in the succeeding period, while the economy is expected to revert to its underlying trend. The ongoing recovery in tourism, the brisker global growth and the support from the real exchange rate are anticipated to stand out as the key drivers of exports in the period ahead.

On the other hand, due to the waning support from additional loan acceleration to growth and the expiration of tax incentives on durable goods, domestic demand is expected to lose some pace. In addition, the third quarter's positive base effect will vanish in next year, which will contribute to the normalization of growth. Given these circumstances, the uncertainties regarding the monetary policies of advanced economies, the course of capital flows and geopolitical developments continue to weigh on growth (Box 4.1).

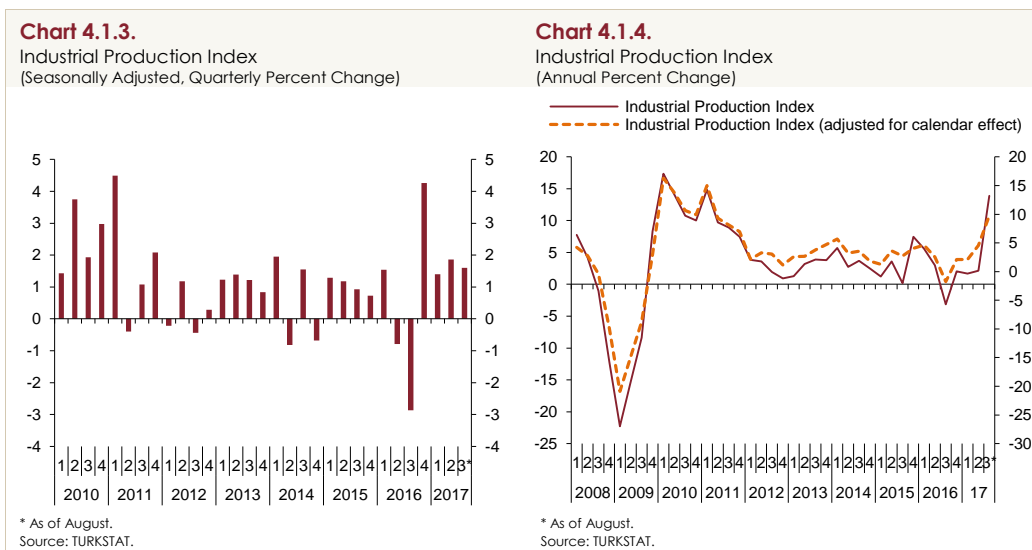
4.1. Supply Developments

In the second quarter of 2017, GDP grew by 5.1 percent year-on-year and by 2.1 percent quarter-on-quarter in seasonal and calendar-adjusted terms. Quarterly and annual growth was spurred by all sectors in the second quarter (Charts 4.1.1 and 4.1.2).

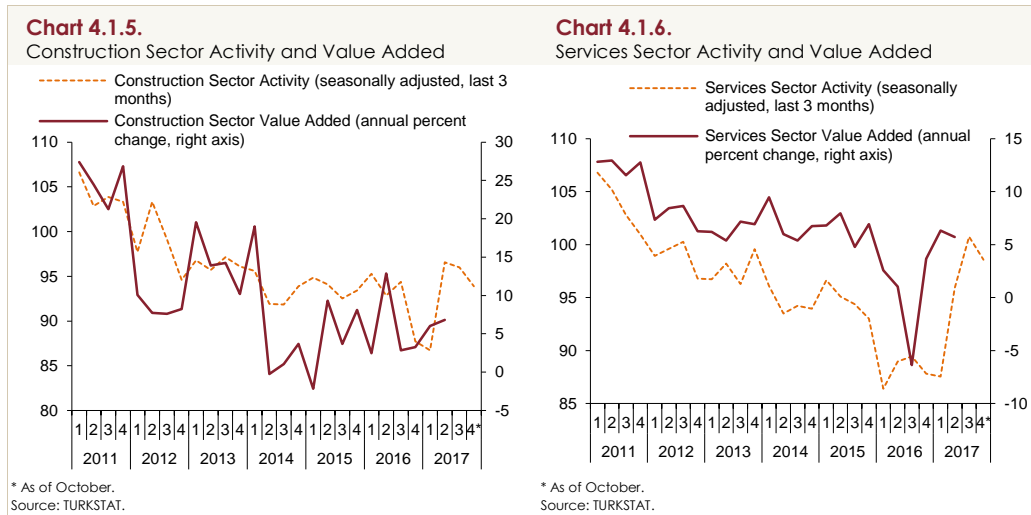


Industrial production data for July and August 2017 indicate that economic activity remained buoyant, albeit with some slowdown compared to the second quarter (Chart 4.1.3). This slowdown is mostly attributed to the exporting sectors, while tourism-affiliated and domestic-market-oriented sectors offered a positive contribution to industrial production. Moreover, in year-on-year terms, the July-August period witnessed a hike of 13.9 percent in industrial production due to the low base effect caused by the turmoil in July 2016 (Chart 4.1.4).

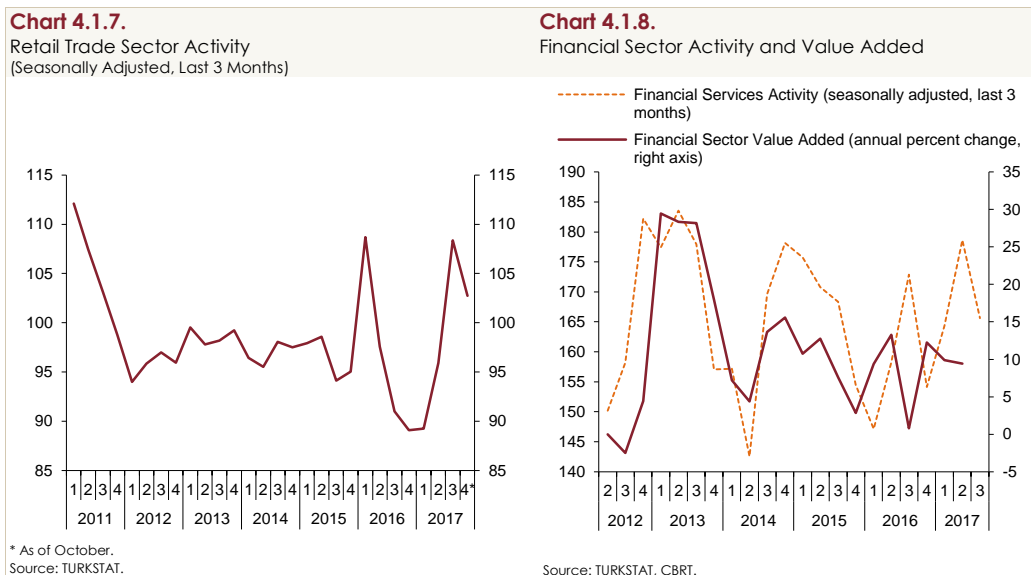
Compared to the second quarter, subcategories of industrial production reveal that capital goods excluding vehicles posted an increase. In the meantime, non-durable goods started to recover, while durable consumption goods remained robust amid tax incentives. As for intermediate goods, the recovery continued strongly. These indicators show that the rise in production saw a wider sectoral spillover. In fact, production of non-durable consumption goods registered an increase in the third quarter following a flat course in the first half of the year, which confirms that domestic demand gained momentum on the back of the partial rebound in the labor market and tourism.



The brisk course of the value added for the construction sector, which buoyed up growth considerably in the first half of the year, is expected to continue in the third quarter thanks to the ongoing infrastructure investments and the uptrend in housing sales (Chart 4.1.5). Sectors supplying construction inputs, particularly the production of non-metallic minerals, also underpin this outlook.



Having accelerated in the first half of the year, indicators for services show further acceleration in the value added in the third quarter (Chart 4.1.6). The retail trade sector activity, which is a major component of services and also closely associated with consumption demand, is expected to increase in the third quarter parallel to the uptick in domestic demand and tourism (Chart 4.1.7). On the other hand, the financial sector activity, which gained pace due largely to the CGF-backed loans in the second quarter, is expected to spur growth in the third quarter at a slower pace (Chart 4.1.8).

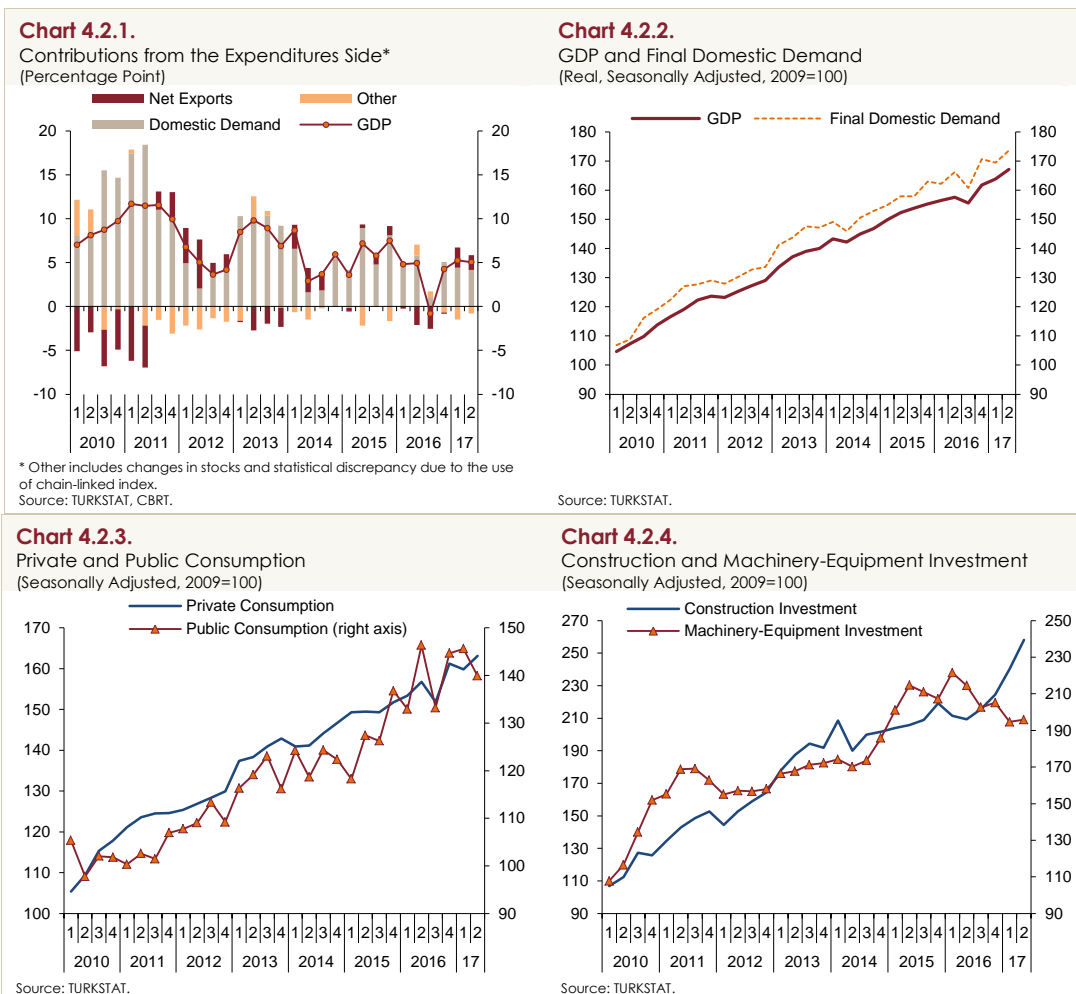


All in all, current indicators suggest that economic activity followed a robust course in the third quarter of 2017. Annual growth in this period is expected to be boosted considerably by calendar and base effects.

4.2. Demand Developments

The data on GDP from the expenditures side indicate that both final domestic demand and net exports maintained their positive contributions to annual growth, albeit at slightly pace compared to the first quarter (Chart 4.2.1). Private consumption and construction investments were the key drivers of annual growth, whereas public consumption and machinery-equipment investments saw a year-on-year contraction in this period.

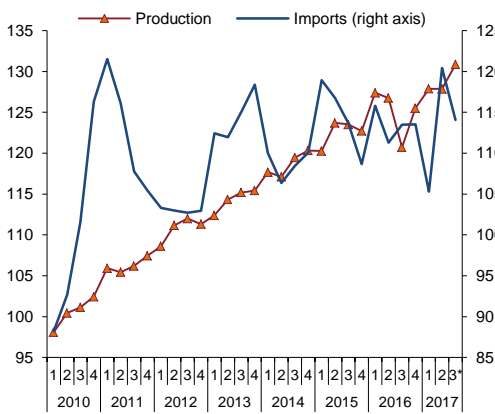
Seasonally adjusted data reveal that GDP growth has accelerated on a quarterly basis since the first quarter. Contrary to the first quarter, quarterly growth relied on domestic demand in the second quarter (Chart 4.2.2). Exports lost momentum and domestic demand triggered increases in imports, leading to a negative contribution from net exports to quarterly growth. In the second quarter, alleviated uncertainty, improved confidence, the appreciated Turkish lira, increased per capita real wages, the rebound in the labor market and accommodative policies provided a strong quarterly boost to private consumption expenditures. Public consumption spending, on the other hand, receded in the second quarter after supporting growth in the previous two quarters (Chart 4.2.3). On the investments front, construction investments maintained the strong momentum, while machinery and equipment investments remained virtually unchanged (Chart 4.2.4).



In the third quarter of 2017, private consumption demand remained robust at a slightly decelerating pace compared to the second quarter. In the July-August period, production of consumption goods increased, whereas imports thereof have receded since the second quarter (Chart 4.2.5). On a quarterly basis, sales of automobiles inched up, while sales of white goods crawled down in the third quarter. Against this background, third-quarter sales data indicate that private consumption is expected to surge in the third quarter on a year-on-year basis amid the calendar effects and the low base effect from the previous year (Chart 4.2.6).

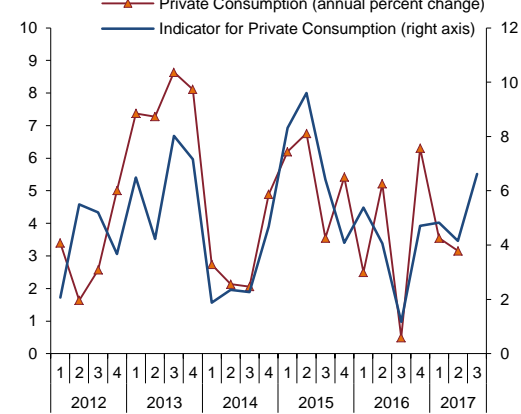
Developments in the factors affecting consumption demand suggest that the quarterly increase in per capita real wages is likely to continue in the third quarter. Moreover, the partial improvement in the labor market is believed to support consumption demand. Consumer loans, another major source of financing, are still on the increase (Chart 4.2.7). However, the depreciation of the Turkish lira in the third quarter and its impact on consumer confidence are expected to put a partial limit on private consumption expenditures (Chart 4.2.8).

Chart 4.2.5.
Production and Imports of Consumption Goods
(Seasonally Adjusted, 2010=100)



* As of August.
Source: TURKSTAT, CBRT.

Chart 4.2.6.
Private Consumption and the Indicator for Private Consumption*



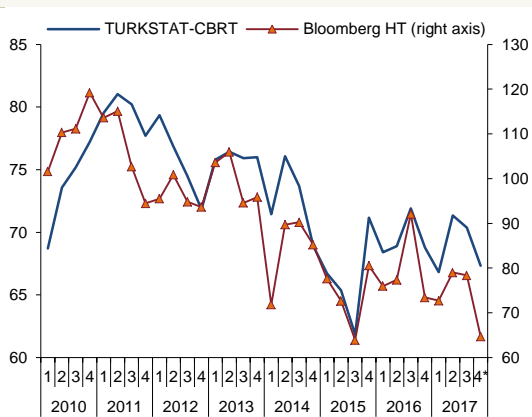
* The indicator for private consumption is the weighted average of domestic automobile sales, domestic white good sales and retail sales volume index, where weights are obtained from a linear regression.
Source: AMA, WGMA, TURKSTAT, CBRT.

Chart 4.2.7.
Annualized Consumer Loan Growth
(Nominal, 13-Week Moving Average, Percent)



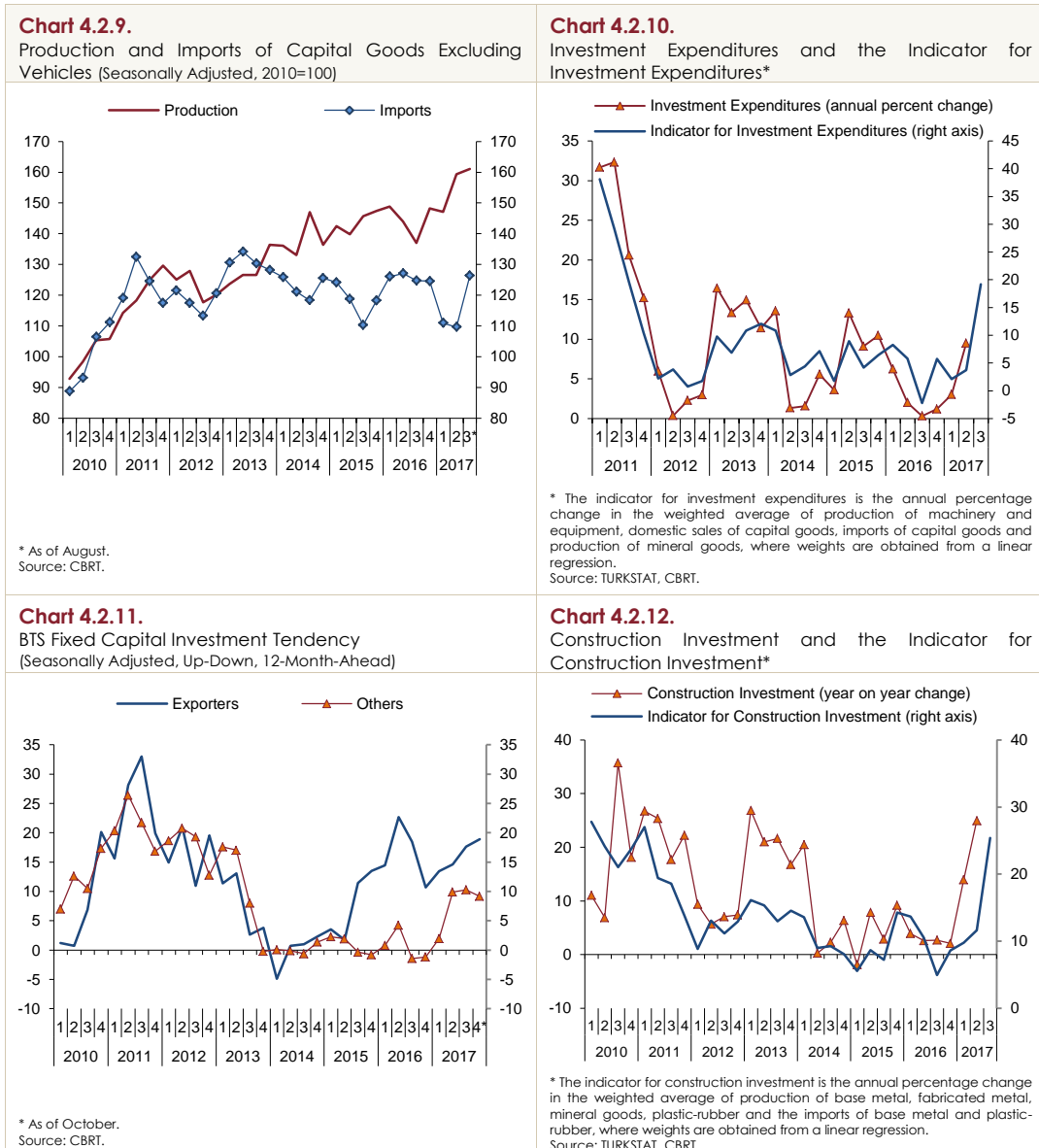
Source: CBRT.

Chart 4.2.8.
Consumer Confidence



* As of October.
Source: TURKSTAT, Bloomberg HT.

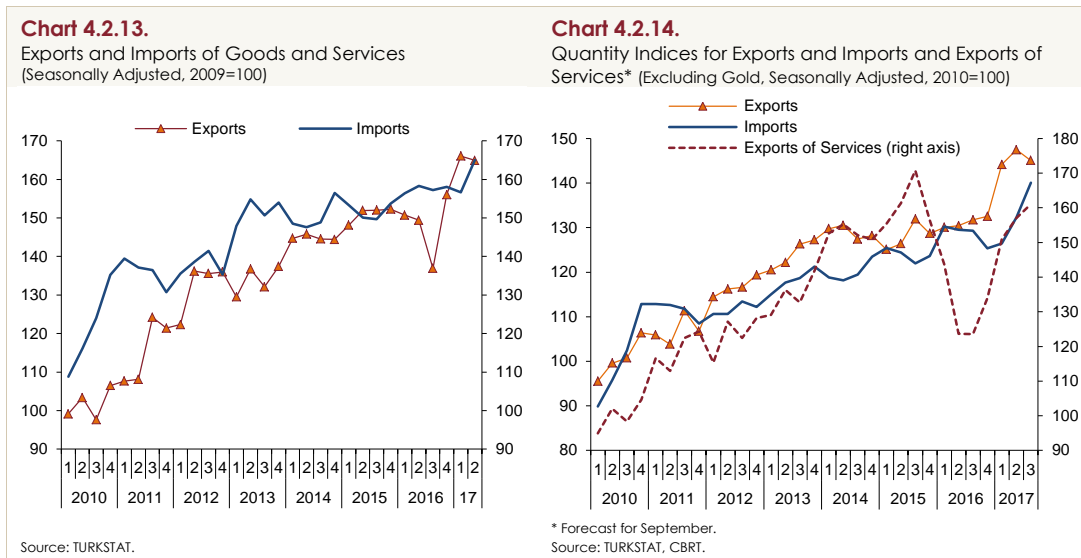
Machinery and equipment investments signal a rebound in the third quarter. Production and imports of capital goods excluding vehicles hint at an uptick in sluggish machinery and equipment investments in the third quarter (Chart 4.2.9). The indicator for investment expenditures suggests that investment spending, which surged in the second quarter, will continue to be on an uptrend in the third quarter (Chart 4.2.10). Sustained improvement in the fixed capital investment tendency of the manufacturing firms gives favorable signals for investment demand, which prove even stronger in exporting sectors operating with relatively high capacity (Chart 4.2.11, Box 4.3). In addition, indicators show that the brisk course of construction investments continues in the third quarter (Chart 4.2.12).



Exports of goods and services receded on a quarterly basis in the second quarter of 2017 in contrast to imports thereof that increased on the back of the brisk domestic demand (Chart 4.2.13). Thus, contrary to the previous two quarters, net exports limited quarterly growth. Offering a more reliable outlook for the underlying trend of external trade, quantity indices excluding gold portray a

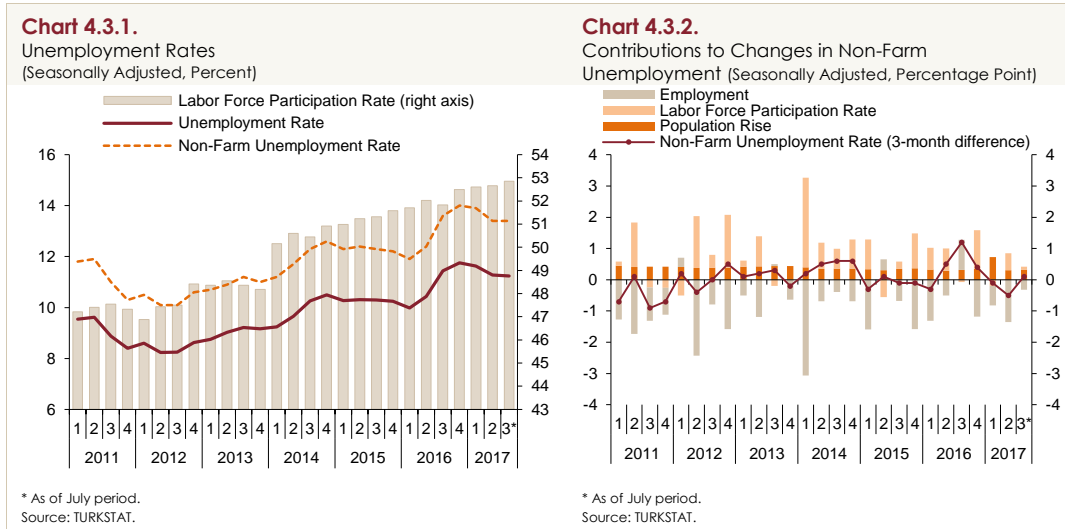
slowdown in exports of goods in the third quarter against a further growth in the imports thereof amid robust consumption and investment demand. The upturn in the global economy, especially in the EU, and the flexibility of market diversification stimulate exports of goods. Moreover, the recent recovery in tourism also offers contribution to exports of services (Chart 4.2.14). Rising imports of gold in this period led to higher imports of goods than implied by the quantity index excluding gold. All in all, due to the deceleration in exports and the uptick in imports, net exports are likely to weigh more on quarterly growth in the third quarter.

In sum, the stronger domestic demand in the second quarter of 2017 stimulated economic activity compared to the first quarter. Indicators for the third quarter reveal a sustained brisk course in economic activity. In this period, private consumption demand is likely to increase further, and machinery-equipment investments may witness a partial recovery, while net exports are projected to curtail quarterly growth.

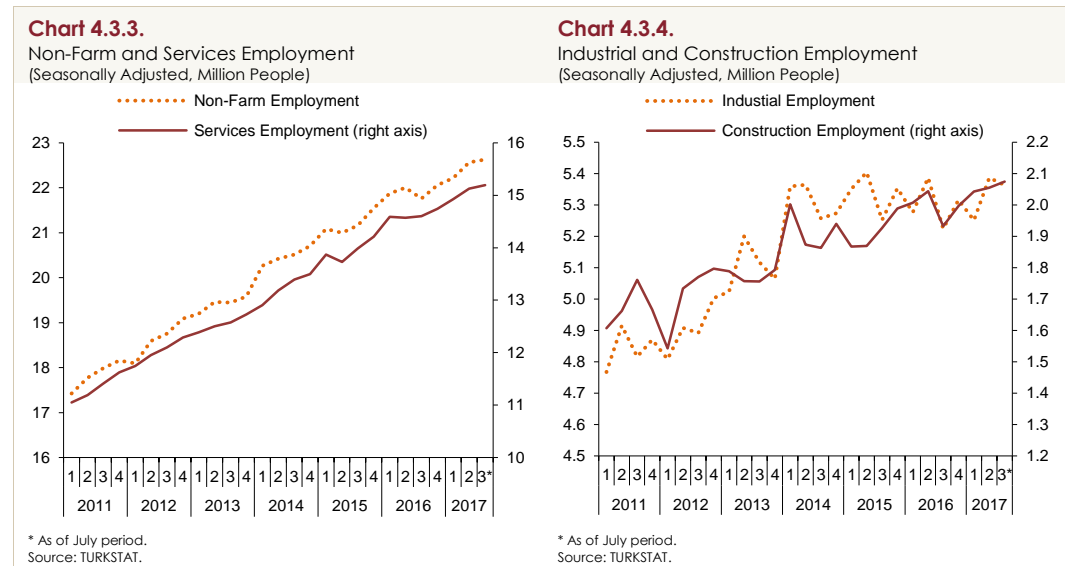


4.3. Labor Market

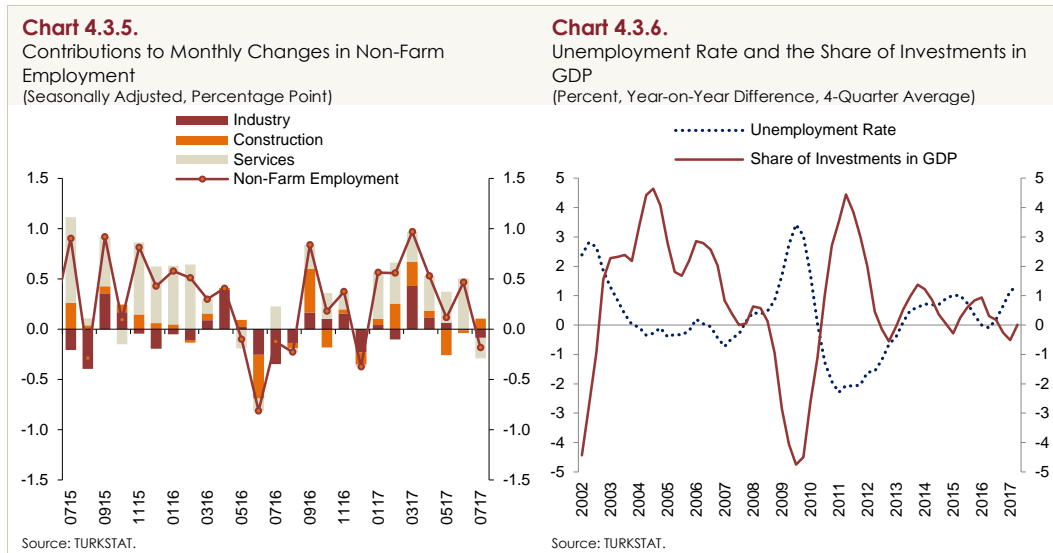
Unemployment rates have shown a downward trajectory since early 2017 (Chart 4.3.1). In the second quarter, the seasonally adjusted total unemployment rate dropped by 0.3 points quarter-on-quarter to 11.3 percent. This stemmed from rising non-farm employment amid the quarterly acceleration in economic activity, while the rising labor participation rate restricted the fall in unemployment (Chart 4.3.2). In the July period, the seasonally adjusted total unemployment rate fell to 11.2 percent, while the non-farm unemployment rate remained intact at 13.4 percent.



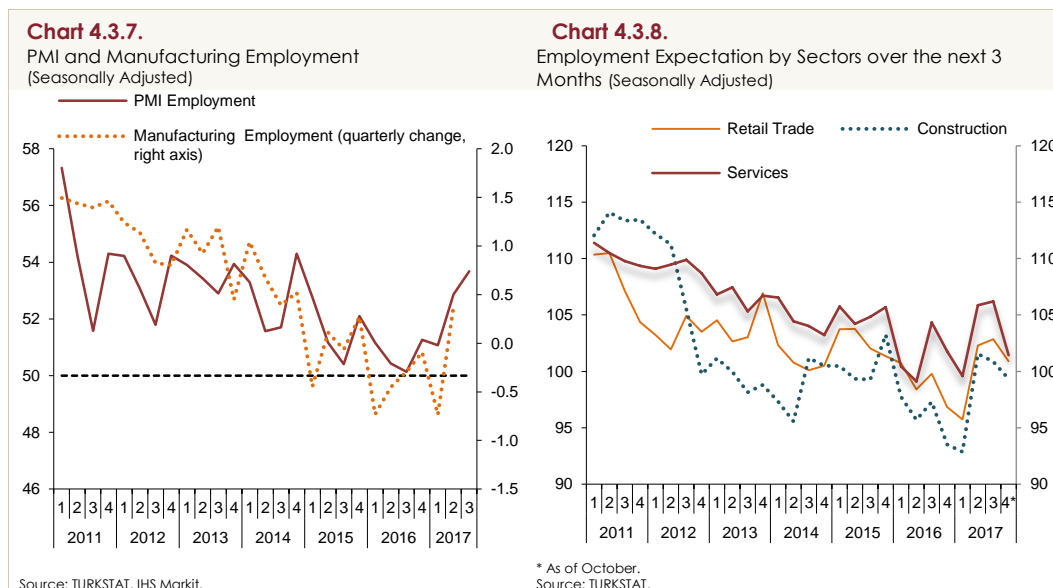
In July 2017, non-farm employment rate inched up by 0.3 percent compared to the second quarter (Chart 4.3.3). The increase in non-farm employment was driven solely by the construction sector. On the other hand, industrial and services employment posted a slight downturn in this period. Employment data show that the construction sector, which was among the key drivers of growth in the first half of the year, remained robust in the third quarter (Chart 4.3.4). However, increased industrial production in July and August is yet to have a boosting effect on the industrial employment. Despite the uptick in production and value added, industrial employment has remained almost unchanged since early 2014, which is attributed to the sluggish activity of small and medium-sized firms (Box 4.3). In the July period, services employment registered a decline for the first time since the start of the year (Chart 4.3.5). It should be noted with regard to domestic and external demand conditions that services employment is more favorable in sectors, which are strongly engaged in external trade, whereas it is weaker in sectors that are relatively closed to external trade.



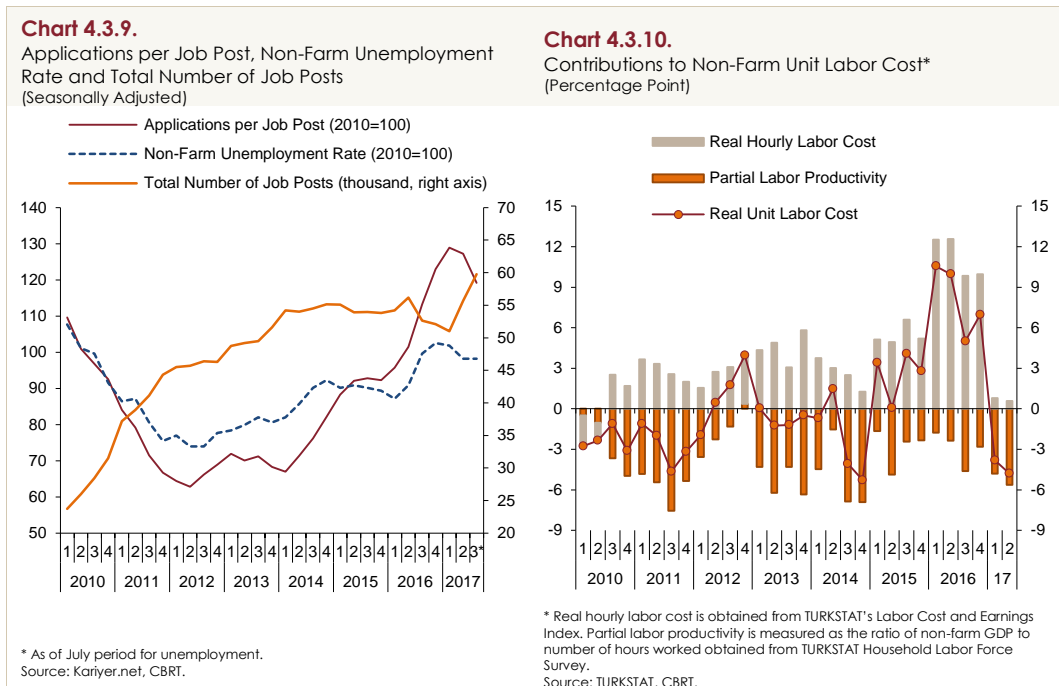
In the third quarter, in spite of the strong course of economic activity spilling over into sectors, the labor market exhibited a partial recovery. Although this sectoral spillover has recently widened, small and medium-sized non-exporting firms are yet to recover strongly, which restricts growth from having more marked positive effects on investments and the labor market (Chart 4.3.6, Box 4.3).



Leading indicators show that the upward track in employment continued in the third quarter. The PMI employment index signals an upswing in the manufacturing employment (Chart 4.3.7). Expected number of employees over the next 3 months may witness a slight increase in the services and retail trade in contrast to a limited decline in construction (Chart 4.3.8). Data from Kariyer.net indicate that the total number of job posts signifying the new job opportunities accelerated remarkably in the third quarter, while applications per job post, which are highly correlated with the unemployment rate, decreased further (Chart 4.3.9).



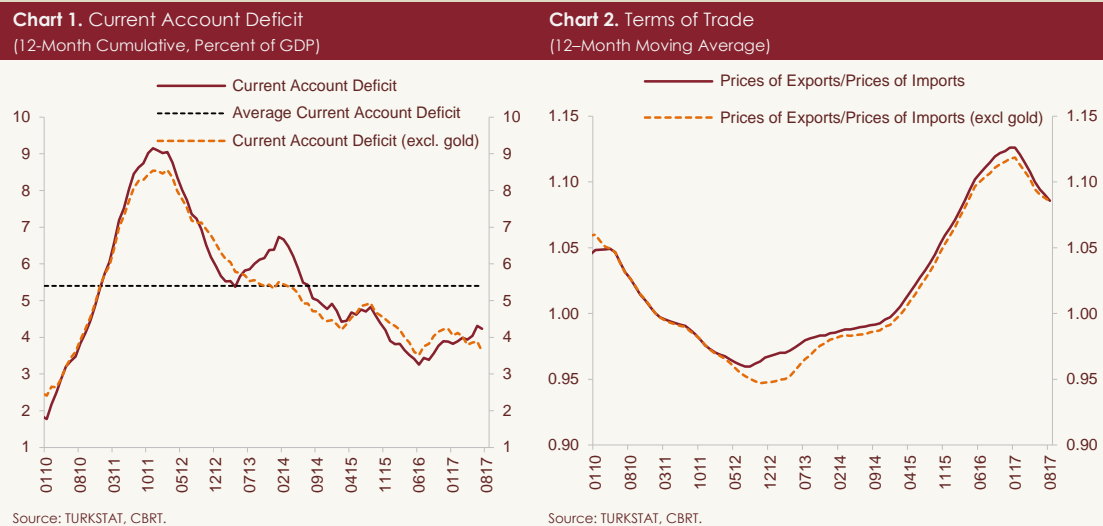
In 2016, real unit labor costs soared due to minimum wage hikes and the economic slowdown, despite government subsidies offered to employers. The lower increase in the minimum wage in 2017 compared to 2016, the sustained government subsidy and the soaring inflation put a lid on hourly real unit labor costs owing to the high base effect. Moreover, the rebound in economic activity and partial recovery in labor productivity pulled the real unit labor cost down in the first half of 2017 (Chart 4.3.10). However, cumulative labor cost increases in the last two years proved quite higher than past years. Upon an annual uptick of 12.3 percent on average in the 2012-2015 period, hourly labor costs posted an average increase of around 16 percent in the 2016-2017 period, which should be noted to bear adverse effects on competitiveness and inflation (Box 4.2).



Box
4.1

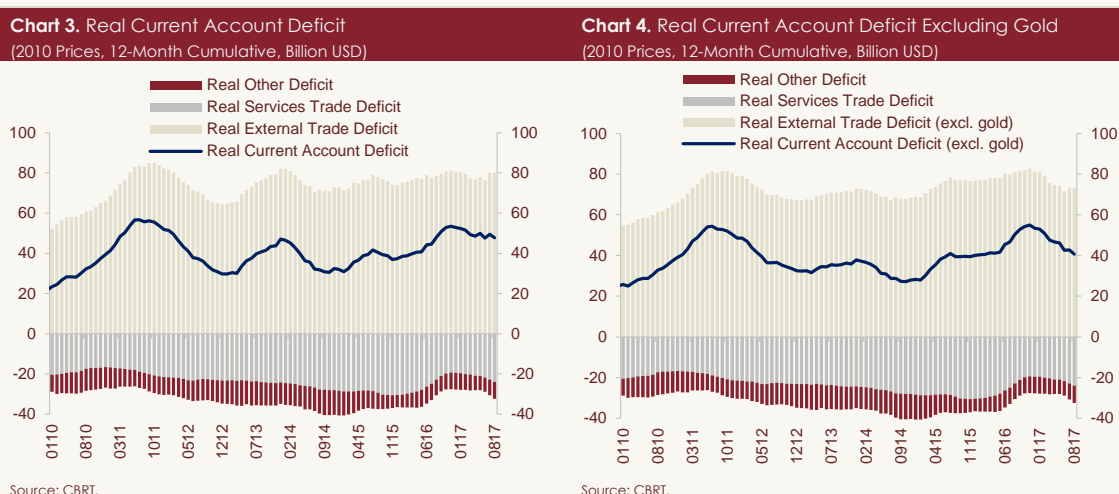
Real Improvement in Turkey's Current Account Deficit

Following the global financial crisis, regulatory institutions in Turkey adopted a macroprudential policy approach which is centered on financial stability. This provided a steady and gradual improvement in the current account deficit, which brought lower sovereign risk with increased quality in financing. Thanks to public measures, incentives and the accommodative macroprudential policies, the economic activity gained a considerable momentum in the first half of 2017. On the other hand, net imports of gold saw an upsurge in this period, while terms of trade witnessed deterioration amid energy price hikes. Despite these adversities, the current account deficit did not register a remarkable deterioration in the first three quarters of 2017 (Charts 1 and 2). In fact, the current account deficit excluding gold has continued to decline. When analyzing the underlying trend of the current account deficit, the high volatility in terms of trade should be taken into account in order to have a more reliable assessment of the effects of growth-boosting incentives and measures on the external balance. Against this background, this box examines the real improvement experienced in the current account balance over 2017.



In order to analyze the course of the real current account deficit, the external trade deficit, services trade deficit and other deficit are analyzed individually. External trade deficit denotes the difference between imports and exports of goods announced by TURKSTAT, while services trade deficit is compiled from services balance data in the balance of payments statistics. Other deficit is composed of the deficit stemming from the primary income, secondary income, shuttle trade and adjustments to external trade items under the balance of payments statistics. In estimating the real current account deficit, all variables are measured at January 2010 prices. In particular, the real export and import series used in the calculation of real external trade balance are derived by multiplying the January 2010 values of these series by the percentage change in the respective quantity indices for each month. The real values of other series are obtained similarly, but for variables without the quantity data, real series are generated by using the CPI series. For items under other deficit that are related to trade of goods, real values are obtained by the respective quantity indices, while for items related to income, the real values are derived by CPI.

Chart 3 shows the evolution of the real current account deficit and its subcategories over time. Accordingly, the real current account deficit follows a volatile course during the analyzed period. The real current account deficit increases during 2013 and 2015, which is marked by a contraction in nominal current account deficit amid an improvement in terms of trade. This increase is driven by the real external trade deficit that surged in line with Turkey's high growth performance. Although, the real current account deficit has historically been determined by external trade deficit, recently, the real services deficit also plays a significant role in the course of the real current account deficit. In fact, due both to domestic and external developments, especially the relations with Russia, the tourism revenues plummeted in 2016, leading to a fast deterioration in the real services balance. This pushed the real current account deficit upwards despite the absence of a notable deterioration in the real external trade deficit. On the other hand, in 2017, the real current account deficit improved slightly on the back of the gradual increase in the real services surplus and the recovery of real exports. During January-August 2017, the nominal current account deficit widened, while the real current account deficit narrowed, which signifies the impact of relative prices, i.e. the terms of trade on the nominal current account balance.



In order to have a better understanding of the recent trends in the external trade, the real current account deficit and its subcategories are analyzed in annualized terms by excluding the highly volatile gold trade (Chart 4). Accordingly, with the exclusion of gold trade, the real external trade deficit plummets after November 2016, pulling the real current account deficit considerably down. The annual real current account deficit in August 2017 declines significantly by around 13 billion USD (in terms of January 2010 prices) compared to the end of 2016. About 8 billion USD of this fall stems from the drop in external trade deficit excluding gold, while 5 billion USD is owed to the contraction in the real services deficit.

In sum, in 2017, the current account deficit improved in real terms compared to 2016. The improvement is more notable with the exclusion of gold trade. In the first three quarters of 2017, the economic activity gained momentum on the back of the CGF loans and various incentive policies. The current account balance improved without any decline in the national income, which indicates that the adopted fiscal measures and incentives as well as macroprudential policies were successful in balancing the economy.

Box
4.2

Extending the Coverage of the Real Effective Exchange Rate Index Based on Unit Labor Cost

The real effective exchange rate index based on unit labor cost is one of the significant indicators to measure international competitiveness. The index is computed by taking the weighted average of the local currencies according to the share of their respective countries in trade and also adjusting for the relative unit labor cost effects. The real effective exchange rate based on unit labor cost for advanced economies, which is currently released by the CBRT, covers only 15 major European economies besides the US. However, the low number of countries in the coverage as well as the limited representation rate and the bias towards advanced economies prevent the use of the present index as a reliable indicator of competitiveness. Thus, this box introduces a new real effective exchange rate index that expands the coverage of the current index.

As of 2016, the current index is able to represent 45 percent of Turkey's total exports excluding gold, where advanced economies make up 98 percent of the index (Table 1). In order to keep the country coverage as wide as possible, a new index has been derived where the countries are weighted according to their annual average share in exports excluding gold. Thus, the coverage of the newly derived annual index is extended to an additional 45 countries such as the United Arab Emirates, Iran and Russia, which have major shares in Turkey's exports. Accordingly, as of 2016, the number of countries is increased from 16 to 61, the coverage ratio is raised from 45 percent to 75 percent, while emerging economies have a 35-percent representation rate in the new index.

Table 1. Comparison of the Real Effective Exchange Rate Indices

	Current Index	New Index	Alternative Index
Number of Countries	16	61	36
Representation Rate* (Percent)	45	75	65
Country Profile	98 percent advanced economies vs. 2 percent emerging economies	65 percent advanced economies vs. 35 percent emerging economies	74 percent advanced economies vs. 26 percent emerging economies
Frequency	Quarterly	Annual	Annual
Data source (Unit labor cost)	Eurostat	OECD, Eurostat, IHS Markit, IMF, World Bank, ILO	OECD, Eurostat, IHS Markit, IMF, World Bank, ILO
Data source (Exchange rates)	CBRT, IFS	CBRT, IFS, Bloomberg	CBRT, IFS, Bloomberg
Weight	Bilateral external trade	Excluding gold exports	Bilateral external trade

* As of 2016.

Similar to the current index, the new index is measured as follows:

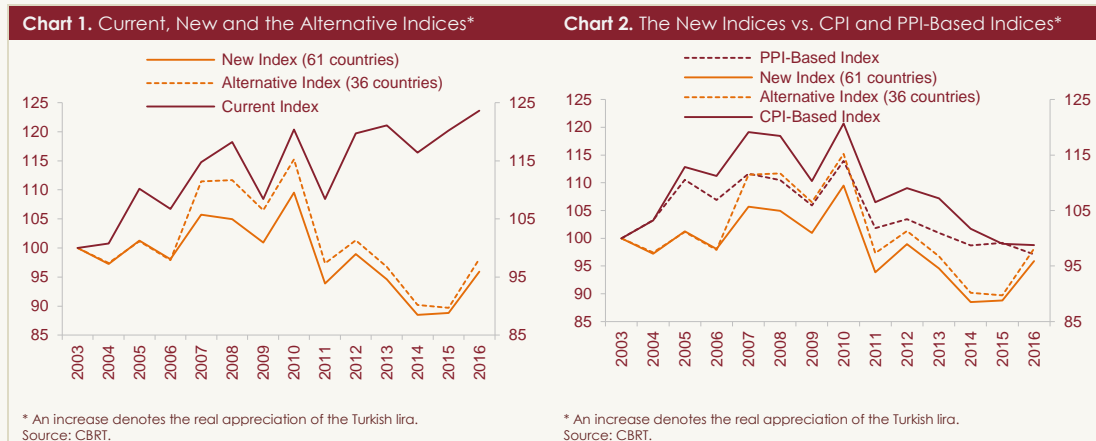
$$REER_t = REER_{t-1} \prod_{i=1}^N \left[\frac{\frac{P_{t,TUR}}{P_{t,i} \times e_{t,i}}}{\frac{P_{t-1,TUR}}{P_{t-1,i} \times e_{t-1,i}}} \right]^{w_{t,i}}$$

In the formula, $w_{(t,i)}$ shows the weight of country i within Turkey's total exports in year t ; $P_{(t,TUR)}$ is Turkey's unit labor cost in year t ; $P_{(t,i)}$ indicates the unit labor cost of country i in year t ; $e_{(t,i)}$ is the exchange rate for the currency of country i against Turkish lira in year t ; and N denotes the number of countries. Given that $REER_{(t-1)}$ stands for the real exchange rate index for the previous year, $REER_{(t)}$, the real exchange rate for the current year is computed by chain index. A higher index value denotes a real appreciation in the Turkish lira, which indicates that the prices of Turkish goods increase against foreign goods.

In order to take into account the competition in the third-country markets, an alternative index is also constructed by using weights from bilateral external trade data. Due to data constraints, the number of

countries included in this index is limited to 36. With the inclusion of the additional 20 countries, the coverage ratio of the index thus increases from 45 percent to 65 percent, while the share of emerging economies is 26 percent.

Chart 1 provides a comparison of these indices to the current index. Accordingly, it can be seen that both the new and the alternative indices hover below the presently available index before 2010, which indicates that the new indices imply less appreciation in the Turkish lira than the current index (Chart 1). After 2010, the new indices diverge notably from the present index. In particular, the current index implies a more valuable Turkish lira whereas both the new and the alternative indices denote a less valuable Turkish lira. This significant gap mainly stems from the fact that the new indices include more emerging economies, which accommodate higher wage hikes compared to advanced economies. In addition, the sovereign debt crisis and the ensuing banking sector crisis caused a delay in the recovery of the European economies after the global crisis and caused more persistent adversities in labor markets. Given that Europe is a major destination of Turkey's total exports, the possibility that wages declined or increased at a slower pace in European countries during this period is a factor to cause an increase in the current index. In other words, in this period marked by declining wages in Europe, higher wage increases in Turkey imply that the relative prices of Turkish goods are higher compared to these countries. Hence, with the extended coverage, the new indices indicate a relatively less valuable Turkish lira.



Given that the new indices have a more balanced coverage and a lower bias towards advanced economies, they can also be more comparable to CPI and PPI-based real exchange rate indices. Accordingly, despite displaying a lower course, the new indices seem to follow a path more consistent with that of CPI and the PPI-based indices than compared to the current index (Chart 2). The minimum wage hike in 2016 caused an increase in unit labor costs and relative prices. Having displayed a significant surge in this period, the new indices diverged notably from the CPI and PPI-based indices. However, the cost of the minimum wage hike to the employer was partly subsidized by the government, therefore, the loss of competitiveness is less than implied by the new indices during this period.

In sum, the new real effective exchange rate indices measured by extended coverage are more representative of Turkey's exports, thus reducing the bias towards advanced economies. Providing a balanced coverage, this produces a more reliable indicator to assess competitiveness.

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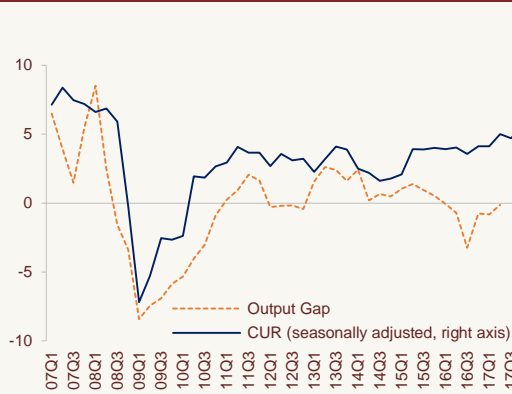
Box
4.3

Capacity Utilization Rate in Manufacturing and the Implications for Investment

Capacity utilization rate (CUR) is defined as the ratio of a firm's actual production amount to the highest possible production amount that can be achieved, and it is used to measure the degree of resource utilization of firms in an economy. A high level of CUR may imply an increase in the working hours of workers, employment of new workers and a need for fixed capital investment. This box analyzes the CUR developments in manufacturing and the relationship between the CUR and machinery-equipment investments.

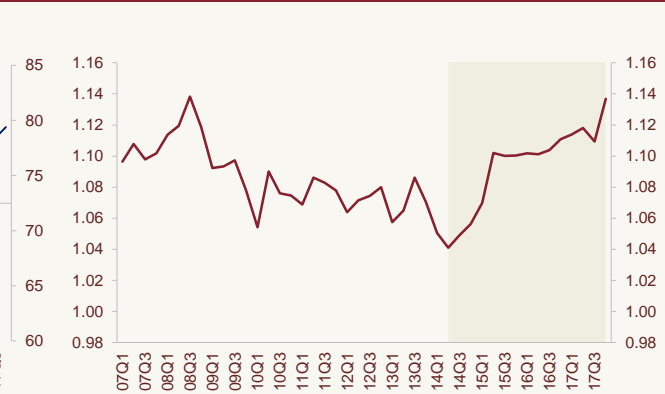
In manufacturing, the CUR is obtained by aggregating the firms' quantitative answers to the BTS question of "the ratio of actual capacity utilization to the currently available physical capacity in percentage terms" weighted by their production values. The CUR calculated through this survey is also used as a business cycle indicator as it shows the gap between actual production and full capacity production level in manufacturing. In fact, capacity pressures heighten in periods of accelerated economic growth and alleviate in periods of decelerated growth (Chart 1). The ratio of CUR weighted by the production values to the unweighted CUR hovers above 1 throughout the analyzed period. This implies that larger firms operate with a higher CUR, while the uptrend in this ratio since the third quarter of 2014 indicates that the gap between large firms and other firms has widened (Chart 2). In fact, the analysis of CUR by firm size¹ indicates that these two variables are positively correlated (Chart 3). On average, the CUR of large-sized firms has remained 6.5 and 11.4 points above the medium and small-sized firms, respectively, while the CUR of medium-sized firms has hovered 5.0 points above that of small-sized firms since 2007. The CUR of small-sized firms is lower than others, signaling that the demand for the products of these firms, having lower efficiency and competitiveness while struggling with challenges against access to relatively new markets may have been weakening for a long time. This divergence between large and small-sized firms may also stem from domestic and external demand conditions, which may reflect on the relative investment appetite.

Chart 1. CUR and Output Gap* (Percent)



* Output gap series is measured as the percentage deviation of the GDP from its long-term trend calculated by the Hodrick-Prescott filter. Source: TURKSTAT, CBRT.

Chart 2. Weighted CUR/Unweighted CUR*



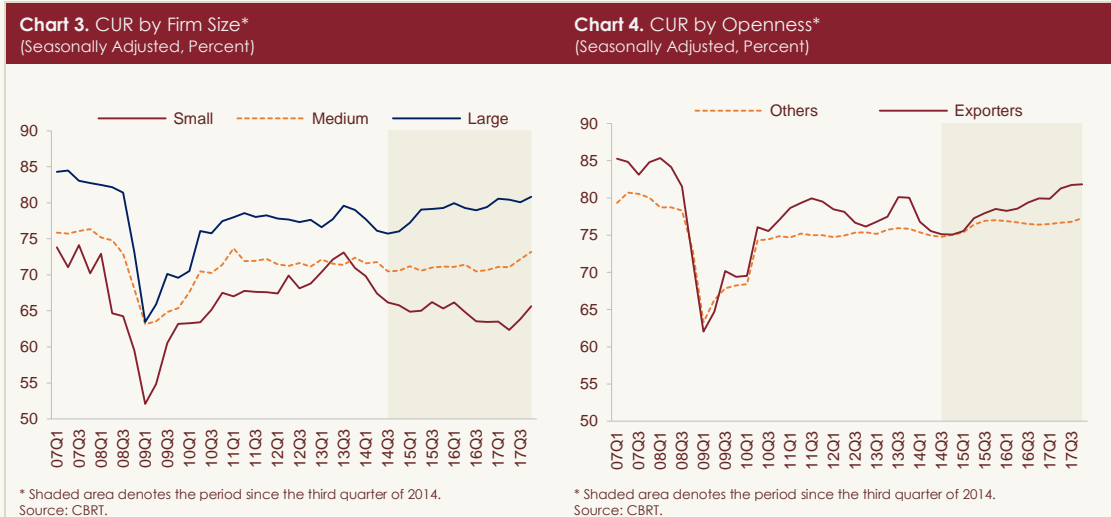
* Shaded area denotes the period since the third quarter of 2014. Source: CBRT.

In order to analyze the effect of openness on CUR, firms are classified as exporters and others², and the CUR of exporting firms is observed to be 2.5 points higher on average than that of other firms (Chart 4). Moreover, the CUR

¹ Firms with less than 50 employees are classified as small, while those with employees between 50 and 250 are categorized as medium and firms with more than 250 employees are considered as large. The response rate to BTS by size since 2007 is 8.5, 55 and 36.5 percent for small, medium and large firms, respectively.

² To classify the firms by openness, first, the financial tables of respondent firms were compiled using CBRT Sectoral Balance Sheet statistics by years. Firms with external sales higher than 40 percent of total sales in the respective year were classified as exporters, while the remaining ones

of exporting firms has trended upwards since the third quarter of 2014, while that of other firms has remained flat with 76 percent on average. These observations may also imply that international competition has given an impetus to firms to work in a more productive and efficient way, and that the market diversification elasticity helped to buffer the adverse impacts of negative demand shocks.³



In periods of robust economic activity, demand conditions and expectations may result in increased need for investment. Thus, CUR may be associated with fixed capital investments. In fact, an analysis of CUR and investment expenditure expectations⁴ of BTS firms suggests that firms projecting an increase in their investment expenditures operate with higher CUR (Chart 5). In addition to this survey evidence, Chart 6 depicts that CUR is also highly correlated with machinery and equipment investments. However, these two variables have diverged notably from each other since the first quarter of 2017, which brings the possibility that the high volatility and uncertainty in financial markets in late 2016 and early 2017 may have caused investment decisions to be postponed.

Erdoğan-Coşar and Şahinöz (2017) construct an uncertainty indicator for the Turkish economy and show that elevated uncertainty has an adverse effect on economic activity, especially on investment demand. Accordingly, a 3-variable VAR model is estimated to analyze the effect of CUR and uncertainty on machinery and equipment investments. The analysis of impulse responses shows that machinery and equipment investments react positively to a CUR shock as expected, while they react negatively to an uncertainty shock (Chart 7). Also, investments respond similarly to a one standard deviation shock. Accordingly, despite stronger economic activity amid the recently adopted measures and incentives as well as the increased capacity utilization in manufacturing, the sluggish course of machinery and equipment investments may be attributed to perceptions of high uncertainty at the onset of the year. The recent improvement in perceived uncertainty is estimated to spur machinery and equipment investments as of the third quarter (Chart 8).⁵

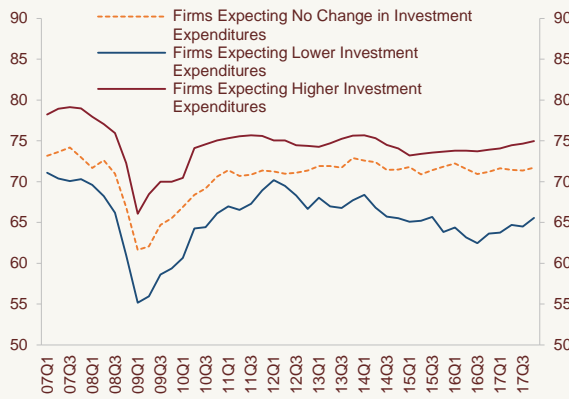
were classified as others. Accordingly, on average, 38 percent of firms responding to the BTS since 2007 are classified as exporters, while 62 percent are classified as others.

³ The international trade literature asserts that as exporting activity entails fixed costs, exporter firms should run with more profitability and efficiency than others (self-selection) and they also have the opportunity to learn how to manufacture higher quality products with higher productivity from their clients, trading partners or foreign competitors (learning by exporting). A former study carried out for the Turkish manufacturing states that both self-selection and learning by exporting applies to exporter firms (Atabek-Demirhan, 2016).

⁴ BTS, Question 23: "Your 12-month-ahead expectation of fixed investment expenditure compared to the past 12 months".

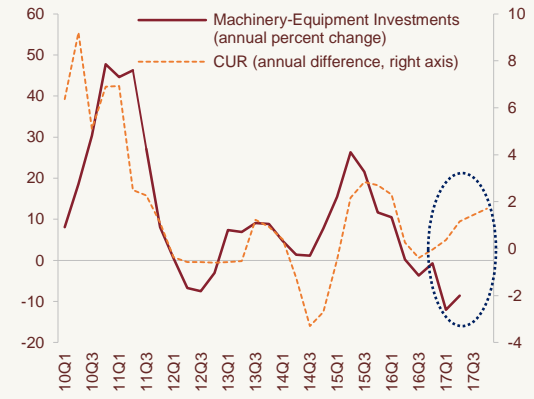
⁵ VAR model was estimated using the data for the 2005Q3-2017Q2 period. The appropriate lag length of the VAR model was chosen according to Akaike information criteria. The variance-covariance matrices of error terms were estimated by the Cholesky decomposition. The ordering used in decomposition was total uncertainty indicator, CUR and machinery-equipment investments. For total uncertainty indicator, see CBRT (2017).

Chart 5. CUR by Expected Investment Expenditures
(Seasonally Adjusted, Percent)



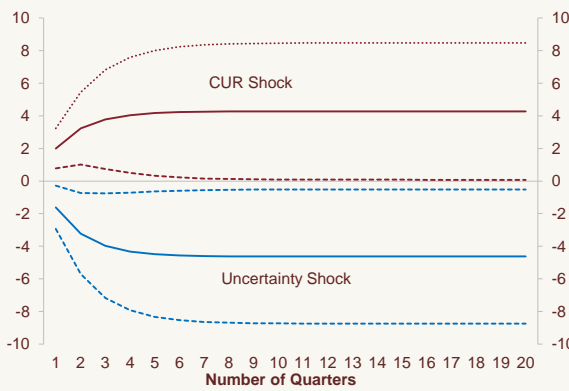
Source: CBRT.

Chart 6. Machinery-Equipment Investments and CUR



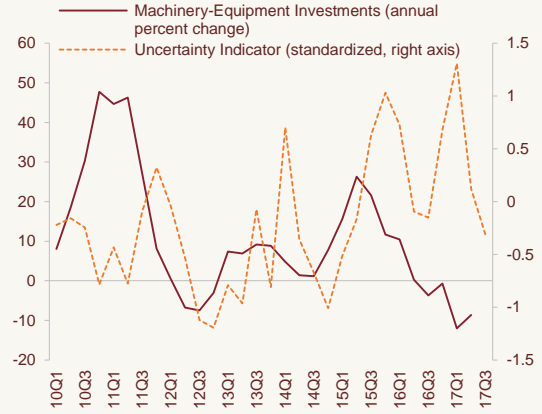
Source: TURKSTAT, CBRT.

Chart 7. Cumulative Response of Machinery and Equipment Investments to One Standard Deviation Shock to Capacity Utilization and Uncertainty (Percent)



Source: TURKSTAT, CBRT.

Chart 8. Machinery-Equipment Investments and Uncertainty Indicator



Source: TURKSTAT, CBRT.

References

- Atabek-Demirhan, A., 2016, Export Behavior of the Turkish Manufacturing Firms, *Emerging Markets Finance and Trade*, 52(11): 2646-2668.
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